

In the Claims

1. (Currently Amended) A method of detecting single frequency and dual frequency signalling tones incorporated in communications voice traffic, the method comprising determining a mean frequency for said traffic via an automatic frequency control circuit, comparing said mean frequency with stored frequency values corresponding to ~~single tone signalling frequencies~~ said single frequency signalling tones and mean values of pairs of ~~dual tone signalling frequencies~~ said dual frequency signalling tones, and, ~~when a frequency match~~ when a match of said mean frequency is determined by said comparison, confirming ~~that said match~~ by determining whether said traffic incorporates ~~a single or dual frequency signal~~ said single or dual frequency signalling tones.

2. (Currently Amended) A method as claimed in claim 1, wherein said ~~single tones~~ single frequency signalling tones comprise continuity test (COT) tones and modem tones.

3. (Currently Amended) A method as claimed in claim 2, and further comprising detecting phase reversals in ~~a tone~~ said single frequency signalling tone identified as a modem tone,

4. (Original) A method as claimed in claim 3, wherein said phase reversals are detected via a phase locked loop.

5. (Currently Amended) A method as claimed in claim 4, wherein said detection of ~~single and dual tone signals~~ said single and dual frequency signalling tones is effected from real and imaginary signal components.

6. (Currently Amended) A method of controlling echo cancellation in a communications network carrying voice traffic incorporating single frequency and dual frequency signalling tones, the method comprising determining a mean frequency for said traffic via an automatic frequency control circuit, comparing said

mean frequency with stored frequency values corresponding to ~~single tone signalling frequencies~~ said single frequency signalling tones and mean values of pairs of ~~dual tone signalling frequencies~~ said dual frequency signalling tones, ~~when a frequency match~~ when a match of said mean frequency is determined by said comparison, confirming that ~~said match~~ said match by determining whether said traffic incorporates ~~a single or dual frequency signal~~ said single or dual frequency signalling tones, and disabling said echo cancellation responsive to the detection of that ~~single or dual frequency signal~~ said single or dual frequency signalling tone.

7. (Currently Amended) A method as claimed in claim 6, wherein said ~~single tones~~ single frequency signalling tones comprise continuity test (COT) tones and modem tones.

8. (Currently Amended) A method as claimed in claim 7, and further comprising detecting phase reversals in ~~a tone~~ said single frequency signalling tone identified as a modem tone.

9. (Original) A method as claimed in claim 8, wherein said phase reversals are detected via a phase locked loop.

10. (Currently Amended) A method as claimed in claim 9, wherein said detection of ~~single and dual tone signals~~ said single and dual frequency signalling tones is effected from real and imaginary signal components.

11. (Original) A method as claimed in claim 6, and embodied as software in machine readable form on a storage medium.

12. (Currently Amended) A signalling tone detector for use in a communications network carrying voice traffic incorporating single frequency and dual frequency signalling tones, the signalling tone detector comprising; an automatic frequency control circuit for determining a mean frequency of an input signal, comparison means for comparing said mean frequency with stored frequency values corresponding to ~~single tone signalling frequencies~~ said single frequency signalling

tones and mean values of pairs of ~~dual tone signalling frequencies~~ said dual frequency signalling tones, first discrimination means for determining the presence of either a single frequency or a pair of frequencies, and second discrimination means responsive to said first discrimination means and said comparison means for providing a signal output indicative of the presence of said single frequency or pair of frequencies.

13. (Currently Amended) A signalling tone detector as claimed in claim 12, and further incorporating means for generating real and imaginary components from said input signal.

14. (Currently Amended) A signalling tone detector as claimed in claim 13, and incorporating phase locked loop means for detecting phase reversals in modem signalling tones.

15. (Currently Amended) A signalling tone detector for use in a communications network carrying voice traffic incorporating single frequency and dual frequency signalling tones, the signalling tone detector comprising; a first output path, a second output path, and a switch arranged to selectively couple an input signal to ~~one or~~ either of the output paths ~~the first or the second output path~~, wherein said first output path comprises an automatic frequency control circuit for determining a mean frequency of an said input signal, comparison means for comparing said mean frequency with stored frequency values corresponding to ~~single tone signalling frequencies~~ said single frequency signalling tones and mean values of pairs of ~~dual tone signalling frequencies~~ said dual frequency signalling tones, first discrimination means for determining the presence of either a single frequency or a pair of frequencies, and second discrimination means responsive to said first discrimination means and said comparison means for providing a signal output indicative of the presence of said single frequency or pair of frequencies, and wherein said second output path comprises a phase locked loop arranged to respond in frequency and phase to modem signalling tones and output means responsive to the presence or absence of phase reversals in said modem signalling tones.

16. (Currently Amended) A signalling tone detector as claimed in claim 15, wherein the input signal to said switch comprises real and imaginary signal components generated by a Hilbert transformer.
17. (Currently Amended) An echo canceller arrangement for use in a communications network carrying voice traffic incorporating single frequency and dual frequency signalling tones, the arrangement comprising an echo canceller circuit, and a signal-signalling tone detector arranged to selectively disable the echo canceller circuit in the presence of predetermined signalling tones, wherein the signalling tone detector comprises an automatic frequency control circuit for determining a mean frequency of an input signal, comparison means for comparing said mean frequency with stored frequency values corresponding to single-tone signalling frequencies single frequency signalling tones and mean values of pairs of dual-tone signalling frequencies dual frequency signalling tones, first discrimination means for determining the presence of either a single frequency or a pair of frequencies, and second discrimination means responsive to said first discrimination means and said comparison means for providing a signal output indicative of the presence of said single frequency or pair of frequencies.
18. (Currently Amended) An ATM switch incorporating an said echo canceller arrangement as claimed in claim 17.
19. (Currently Amended) An echo canceller arrangement as claimed in claim 17, wherein said echo canceller is disposed at the boundary between a time division multiplex network and a connectionless network.
20. (Currently Amended) A communications system comprising a circuit based time division multiplex (TDM) network carrying voice traffic and audio tone signalling traffic, a connectionless network in which traffic is transported in cells, and an interface between said TDM and connectionless networks TDM network and said connectionless network, wherein said interface incorporates an echo canceller circuit arrangement comprising an echo canceller circuit, and a signal-signalling tone

detector arranged to selectively disable the echo canceller in the presence of predetermined signalling tones, wherein the signalling tone detector comprises an automatic frequency control circuit for determining a mean frequency of an input signal, comparison means for comparing said mean frequency with stored frequency values corresponding to ~~single tone signalling frequencies~~ single frequency signalling tones and mean values of pairs of ~~dual tone signalling frequencies~~ dual frequency signalling tones, first discrimination means for determining the presence of either a single frequency or a pair of frequencies, and second discrimination means responsive to said first discrimination means and said comparison means for providing a signal output indicative of the presence of said single frequency or pair of frequencies.